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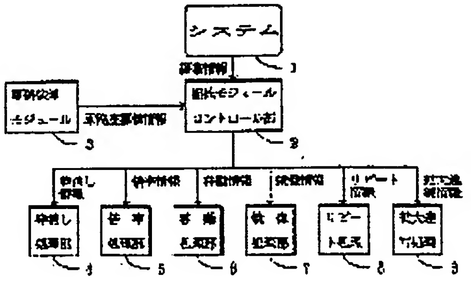
(54) FRAME ERASURE SYSTEM IN PICTURE PROCESSOR

(57)Abstract:
PURPOSE: To prevent the presence of a space due to undesired frame erasure even against repeat processing or processing for magnification or consecutive shot or the like by devising the quantity of frame erasure to be set freely.
CONSTITUTION: The system is provided with an original detection means 3 reading coordinate information of an original at the preliminary scanning and reduction/magnification processing means 2, 4-9 which store picture data of the original to be read at the copy scanning into a memory, read the data, apply such processing to the data as address control, data interpolation and data interleaving and execute processing functions such as image reduction/ magnification and movement, repeat, mirror image, magnified consecutive shot, and the reduction/magnification processing means 2, 4-9 are used to implement frame erasure processing based on the coordinate information of the original. Thus, the information is read through the processing image reduction/ magnification and movement, repeat, mirror image, magnified consecutive shot and frame erasure is also implemented by address control. Thus, undesired frame erasure is avoided and the quantity of frame erasure is freely set.



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CLAIMS

[Claim(s)]
[Claim 1] A manuscript reading means to perform a PURISU can and a copy scan and to read a manuscript, In the image processing system equipped with a image-data-processing means to process by changing the reading signal of a manuscript into digital image data, and an output means to output the processed image data The image data of a manuscript detection means to read the coordinate information on a manuscript at the time of a PURISU can, and the manuscript read at the time of a copy scan is stored in memory. Control of the read-out address, The image processing system characterized by constituting so that it may have a **** processing means to perform interpolation of data and infanticide and to perform processing facilities, such as **** of an image, migration, a repeat, a mirror image, and expansion continuous shooting, and may process by ****(ing) with a **** processing means based on the coordinate information on a manuscript ****, and it is a method.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] The image processing system equipped with a manuscript reading means to perform a PURISU can and a copy scan and to read a manuscript, a image-data-processing means to process by changing the reading signal of a manuscript into digital image data, and an output means to output the processed image data **** this invention, and it relates to a method.

[0002]
[Description of the Prior Art] In the digital copier, the analog signal which read the manuscript is changed into digital multiple-value data, image quality adjustment processing of graininess, gradation nature, and definition and others is performed, and record reappearance is carried out by the halftone dot image. and in the case of a full color digital copier The reading signals B (blue) and G (green) which read the manuscript optically and understood it by the color, From R (red), amendment conversion of a color is carried out to the record signals Y (yellow), M (Magenta), and C (cyanogen) of a toner, ink, and ink donor film color matching material, and the full color manuscript is fundamentally reproduced by piling up the halftone dot image by each color material, and outputting. In this case, since the image by equivalent color material becomes colorless, he removes the equivalent record signals Y and M and C component actually (UCR;Under Color Removal; bottom color removal), and is trying to lose useless consumption of color material. However, if this UCR processing is performed, since the amount of the color material used will decrease, the depth and weight of a color are lost, there is a problem that massive [of the whole color picture] will run short, and since reappearance of gray or black and reappearance of a color with high saturation become opposite relation, they have the problem that the repeatability of a color cannot fully be raised, in simple UCR processing. Then, in order to compensate the lack of massive in such coloring, corresponding to the amount of the color material which carries out lower color removal, black or Japanese ink (K) is generated for a gray output.
[0003] Since an analog signal is changed into digital multiple-value data and processed as mentioned above, it can memorize in memory, conversion of data, amendment, adjustment, and other various edit processings can be performed easily, and various functions can be added. For example, when a manuscript is set, start directions were performed, perform a PURISU can, detect manuscript size automatically, and the corresponding form of size is chosen or a **** scale factor is specified at that time, the form of the size which applied the scale factor to the detected manuscript size can be chosen, and a copy output can be carried out. In order to perform such manuscript size detection, the platen is chosen as the reflection factor and color which are different from white in a manuscript so that the edge part of a manuscript can discriminate from reading image data. For this reason, since a copy output is carried out by the concentration and the color of a platen about the part which separated from the manuscript of a form, ****** which outputs using a manuscript size detection function by making the outside of a manuscript, i.e., the part of a platen, into the white of manuscript natural complexion is performed.

[0004] About what these people already proposed about the above digital color picture formation equipments (for example, refer to JP,2-70173,A and JP,2-31662,A), the outline is explained below.

[0005] Drawing 7 is drawing showing the example of a configuration of digital color picture formation equipment.

[0006] In drawing 7 , IIT (image input terminal)100 reads a manuscript using a CCD line sensor, changes into digital image data the reading signals B, G, and R understood by the color, and IOT (image output terminal)115 performs exposure by the laser beam, and development, and it reproduces a color picture. The edit processor (IPS; image-processing system) of image data is constituted, and the END conversion module 101 between IIT100 and IOT115 to the IOT interface 110 chooses the record signals Y, M, and C of a toner, and the record signal corresponding to [change into K further and] the development color the whole development cycle, and is outputting the reading signals B, G, and R. Here, when changing a reading signal (B, G, R signal) into a record signal (Y, M, C, K signal), it becomes a problem how the color is reproduced according to the reading property of how the balance of the color is adjusted and IIT and the output characteristics of IOT, how the balance of concentration or contrast is adjusted, or how emphasis of an edge, dotage, and moire are adjusted.

[0007] Using a CCD sensor, about each of the reading signals B, G, and R, 1 pixel is incorporated in 16 dots/mm of sizes, and the data is outputted at IIT100 by 24 bits (three colors x 8 bits; 256 gradation). Since the top face is equipped with the filter of B, G, and R, and a CCD sensor has die length of 300mm by 16 dots/mm of consistencies and performs the scan of 16 lines/mm at the process speed of 190.5 mm/sec, it is outputting the reading signal at a 15M/s pixel [per each color] rate mostly. And in IIT100, by carrying out log conversion of the analog signal of the pixel of B, G, and R, it changed into the information on concentration from the information on a reflection factor, and has changed into the digital signal further.

[0008] IPS inputs the reading signals B, G, and R from IIT100. The repeatability of a color, In order to raise the repeatability of gradation, the repeatability of definition, etc., various data processing is performed. The record signal Y The record signal of a development process color is chosen from M, C, and K, and they are ON / thing which changes off and is outputted to IOT115. The END conversion (Equivalent Neutral Density; equivalent-neutral-density conversion) module 101 adjusted to the color signal which carried out gray balance as shown in drawing 7 (conversion), B, By carrying out the matrix operation of the reading signal of G and R, Y, M, The color masking module 102 changed into the record signal corresponding to the amount of toners of C, the manuscript size detection module 103 which performs manuscript size detection at the time of a PURISU can, and elimination (****(ing)) processing of the platen color at the time of a manuscript reading scan, K of optimum dose is generated and it responds to the amount so that muddiness of the color conversion module 104 which changes the color specified in the specific field according to the area signal inputted from a field image control module, and a color may not arise. Y, Each signal in mono-color mode and 4 full color mode is followed with equivalent ****** in M and C. K signal and Y, The concentration adjustment for aiming at improvement in M, the UCR& black generation module 105 which carries out the gate of the signal after performing lower color removal of C, the spatial filter 106 equipped with the function to recover dotage, and the function to remove moire, and repeatability, Contrast adjustment, NEGAPOJI reversal, Color-balance adjustment etc. TRC to perform () [Tone Reproduction] Control; **** processing of the color tone amendment control module 107 and a main scanning direction The **** processing module 108 to perform, the screen generator 109 which changes and outputs the gradation toner signal of a process color to ON / off binary-ized toner signal, the IOT interface module 110, a field generation circuit, and a switch matrix It consists of a field image control module 111 which it has, an edit control module which has the area command memory 112, the color palette video switching circuit 113, and font buffer 114 grade.

[0009] by the way, the above-mentioned digital color picture formation equipment — it ********, the manuscript size detection module 103 is performing processing, and the outline (refer to JP,2-131662,A) is as follows.

[0010] ********(ing) — although it is the processing which erases the outer frame of a

manuscript, namely, makes the reading signal of the part of platen covering white as stated previously, in this processing, in the copy cycle of each development color, the image data of a platen covering part is cleared, it is made a white signal, recognizing a color, and the image data of another side and a manuscript is outputted as it is. For this reason, by ********(ing), then, if color detection is required, for example, tends to process ****** using the output signal of the spatial filter selected by the development color, the problem that the edge of a manuscript is undetectable depending on a development color will arise. Therefore, before a development color is selected by ********(ing), the image data before processing of color conversion, UCR, etc. is performed is used. When the input image data of Y, M, and C was below a threshold, it was specifically judged as the manuscript, and the standup and falling of the signal are detected. And in the n-th line, in the Rhine eye which will continue if it starts, and the value of the counter at that time is latched using a falling signal, the value is calculated and it is a value inside a manuscript (n+1), the manuscript area signal was generated based on the calculated value, and fields other than a manuscript are changed into white data based on the manuscript area signal.
[0011]
[Problem(s) to be Solved by the Invention] However, when ****** is performed as mentioned above using a manuscript size detection module, the evil which only processing which only erases the shadow of the platen back of the outside of a manuscript can be performed, for example, is depended for ****(ing) in repeat processing etc. has arisen.
[0012] Drawing 8 is drawing for the former ****(ing) and explaining the example of the evil of processing, to the image using the above-mentioned conventional manuscript size detection module which **** and continues then in repeat processing, as shown in drawing 8 (b), the margin of the part which performed ****** is made for every repeat, and the output of the image which the repeat was made to follow as shown in ** (b) cannot do. moreover, a rectangle in order to detect the edge of a manuscript as mentioned above and to perform ****** in a fixed amount from there, as not set up ******** freely but shown in drawing 8 (d) — it cannot ********. Consequently, it will become an output as shown in ** (d).
[0013] This invention solves the above-mentioned technical problem, can set up ******** freely, and aims at the image processing system which the unnecessary margin depended for ****(ing) can be made not to be made also to processing of repeat processing, expansion continuous shooting, etc. ****(ing), and offering a method.
[0014]
[Means for Solving the Problem] Therefore, a manuscript reading means for this invention to perform a PURISU can and a copy scan, and to read a manuscript, In the image processing system equipped with a image-data-processing means to process by changing the reading signal of a manuscript into digital image data, and an output means to output the processed image data The image data of a manuscript detection means to read the coordinate information on a manuscript at the time of a PURISU can, and the manuscript read at the time of a copy scan is stored in memory. Control of the read-out address, It is characterized by constituting so that it may have a **** processing means to perform interpolation of data and infanticide and to perform processing facilities, such as **** of an image, migration, a repeat, a mirror image, and expansion continuous shooting, and may process by ****(ing) with a **** processing means based on the coordinate information on a manuscript.
[0015]
[Function] since the image processing system of this invention ****, the coordinate information on a manuscript is read with a manuscript detection means in a method at the time of a PURISU can and it processes by ****(ing) with a **** processing means at the time of a PURISU can — processing of ****, migration, a repeat, a mirror image, expansion continuous shooting, etc. — reading — control of the address — also ****(ing) — it can carry out collectively. Therefore, excessive ****** can be lost and ******** can be set up freely.
[0016]
[Example] Hereafter, the example of this invention is explained, referring to a drawing. Drawing 1 is drawing in which the image processing system of this invention ****(ing) and showing one example of a method.

[0017] In drawing 1 , a system 1 controls according to the input directions from a user for [whole] manuscript reading, processing of edit and others of image data, and a copy output. The manuscript detection module 3 performs manuscript detection processing at the time of a PURISU can, and acquires manuscript coordinate value information, and at the time of a copy scan, from the manuscript detection module 3, the **** module control section 2 will control each processing section (4-9) of a **** module based on such information, if a system 1 to edit information is given for manuscript coordinate value information again. It ****, and information, scale-factor information, migration information, mirror image information, repeat information, and expansion continuous-shooting information are, it **** from such information and manuscript coordinate-value information, the processing section 4, the scale-factor processing section 5, the migration processing section 6, the mirror image processing section 7, the repeat processing section 8, and the expansion continuous-shooting processing section 9 are alternatively controlled by the edit information given to a system 1 from the **** module control section 2, and each processing is carried out to it.

[0018] Drawing 2 is drawing showing the example of migration processing, mirror image processing, and repeat processing. In migration processing, when making the right carry out x (mm) migration of the image for example, as shown in drawing 2 (b), it delays by the address corresponding to a shift amount, and reads. If the amount of [corresponding to this shift amount] address is made to correspond to 16 dots/mm of resolution and a shift amount x (mm) is multiplied by 16, it will become the value converted into the number of dots. As shown in drawing 2 (b), in similarly moving an image to the left, it reads from the value which wrote in by the address corresponding to a shift amount, and was added to the first-time address.

[0019] Moreover, in performing mirror image processing so that it may be shown drawing 2 (Ha), it reads conversely the data written in memory in order to the address 0 - N from Address N. The value to which this set point also converted the manuscript width of face w into the number of dots is used.

[0020] In not performing an above-mentioned shift or mirror image processing, it reads the data written in memory sequentially from the address 0. namely, -- if a field as shown in drawing 2 (d) is considered -- the case of 100% actual size -- address $y1 from -- address $y2 up to -- the case where read by mirror image processing and area is not specified although read -- address $y2 from -- address $y1 up to -- the case where read to reverse and reading area is specified -- address $l2 from -- address $l1 up to -- it reads to reverse. moreover -- the case of **** (scale factor), migration, and a repeat -- address $l1 from -- address $l2 up to -- it reads. also ****(ing) -- since it realizes when only the part of a frame narrows and reads area, it means having specified reading area at the same processing. Moreover, since expansion continuous shooting is repeatedly performed for every area which divided the processing to which area is divided, read and expanded, it becomes repeat processing of **** which specified reading area.

[0021] Moreover, in scale-factor processing, when writing image data in a line buffer, contraction processing performed interpolation for two points, wrote in required data, and was realized by reading to usual, expansion processing was written in the line buffer usual, and when reading, it has realized by performing interpolation for two points and carrying out addition insertion of the required data. And there are reading data (pixels 0, 1, 2, and 3, ...), the location to the reading pixel of the data which will compound a **** scale factor if sequence of N and a pixel is set to m (= 0, 1, 2, 3, ..) is given by mx (1-/N), and the value of the pixel is determined by the algorithm of interpolation for two points from the value and its relative-position relation of a pixel of both sides.

[0022] These people can already propose processing of the above-mentioned **** module (refer to JP,2-161872,A), and, as for this invention, this can be used.

[0023] Drawing 3 showed the flow chart of the **** module control section 2. In the **** module control section 2, first, if a manuscript detection coordinate is acquired, it will investigate and **** whether it **** and ****** is performed from information at the time of a copy scan, and, in activation (YES), a manuscript coordinate will be amended by ******** at it.

[0024] Furthermore, in the case of expansion continuous shooting, addition processing of the movement magnitude for every copy is performed, in the case of a mirror image, reverse read-out mode of memory is set up, and, in a repeat, the number of memory reading repeats is set up.

[0025] After an appropriate time, a setup of a memory read-out starting position, a setup of a memory read-out termination location, and a setup of movement magnitude are performed, and scale-factor processing is performed.

[0026] Next, the example of a configuration of the image processing system with which above-mentioned this invention is applied is shown. Drawing in which drawing 4 shows the example of a configuration of the signal-processing system of an image processing system, and drawing 5 are drawings showing the example of a configuration of the device of an image processing system.

[0027] In drawing 4 the image input section 100 For example, B arranged in the direction of vertical scanning at the right angle, It is IIT which scans to a main scanning direction synchronizing with the timing signal from the timing generation circuit 12, and performs image reading, having the contraction mold sensor which consists of G and R3 CCD line sensor, and moving in the direction of vertical scanning at the rate according to a **** scale factor. It is changed into the 8-bit digital image data by which the gradation expression was carried out from the image data of an analog. To this image data, in the shading compensation circuit 11, a shading compensation is carried out to the variation between each pixel by various factors, and gap amendment between each line sensor is performed in the gap amendment circuit 13. Gap amendment is to delay the image data which read only the part equivalent to the gap of a CCD line sensor by FIFO14, and obtain B of the same location, G, and R image data at the same time of day. The ENL (Equivalent Neutral Lightness; equivalence neutral lightness) conversion circuit 15 performs gray balance processing of image data using the parameter according to a manuscript type, adopts reverse how to take gray for every pixel with the NEGAPOJI reversal signal from the edit processing section 400 mentioned later, and carries out NEGAPOJI reversal, for example, only a certain appointed field can reverse NEGAPOJI now.

[0028] B and G which were processed by the ENL conversion circuit 15, and R image data are signal L* of uniform color space, a*, and b* at MATORISSUKU circuit 16a. It is changed. Signal L* of uniform color space, a*, and b* It is L* with the axis of coordinates with which each intersects perpendicularly. Lightness is expressed and they are a* and b*. A chromaticity flat surface (a hue, saturation) is expressed. Such signal L* of uniform color space, a*, and b* While making an interface with the exteriors, such as a computer, easy to take through a memory system 200 by changing, detection is made easy for color conversion, edit processing, and image information. A selector 17 takes out alternatively the image data from the memory system 200 which is the output of matrix conversion circuit 16a, or an interface with the exterior, or incorporates both image data to coincidence, and performs processing of texture composition or watermark composition. Therefore, in the selector 17, it has the function to perform setup of a synthetic ratio, data processing, and synthetic processing about a synthetic image.

[0029] The substrate removal circuit 18 is for creating the histogram of manuscript concentration for example, by the PURISU can, detecting substrate concentration, flying about the pixel below substrate concentration, and improving copy quality over the manuscript [like] which is a newspaper etc. and with which it was covered. The manuscript detecting circuit 19 detects and memorizes manuscript size by detecting the boundary of the rear face of a black platen, and a manuscript, and asking for a circumscription rectangle. In these substrates removal circuit 18 and the manuscript detecting circuit 19, they are signal L* of uniform color space, a*, and b*. They are inside and lightness information Signal L* It is used.

[0030] In the edit processing section 400, setup of the area command for switching edit processing, a parameter, etc. for every field and generation of the field control signal based on an area command are performed, and processing of color edit, color conversion, marker color detection, and others is performed to image data. And the image data to which the processing was performed is inputted into matrix conversion circuit 16a and the pictorial symbol separation circuit (TIS circuit) 20.

[0031] the image data after edit processing — receiving — matrix conversion circuit 16a — L*, a*, and b* from — it is changed into the toner color of Y, M, and C, and two or more pixels are blocked and field discernment of a color alphabetic character / black alphabetic character / pattern (an alphabetic character/halftone) is made in the pictorial symbol separation circuit 20. In

the lower color removal circuit 21, generation of a black print (K) and equivalent removal of Y, M, and C are performed according to a mono-color / full color signal from the image data of Y, M, and C which were changed by matrix conversion circuit 16b, the image data of a process color is outputted, a hue judging is performed further, and it is a hue signal (Hue). It generates. In addition, since the delay of 12 lines arises to the signal of field discernment in order to block in case discernment processing is carried out in the pictorial symbol separation circuit 20, in order to synchronize a hue signal and image data to this delay, FIFO 22a and 22b takes timing.
[0032] **** circuit 23b is ****(ed) as explained previously. Information, scale-factor information, migration information, It **** and processes from mirror image information, repeat information, expansion continuous-shooting information, and manuscript coordinate value information. Since **** processing is carried out by performing scale-factor processing, migration processing, mirror image processing, repeat processing, and expansion continuous-shooting processing, and changing a scan speed according to ****** in the image input section 100 about the direction of vertical scanning For **** processing here, infanticide of image data or interpolation is ********** about a main scanning direction. **** circuit 23a is for carrying out **** processing of the area command so that the execution area of field control information may not shift corresponding to the **** processing to image data. The field control information by which **** processing was carried out is decoded by the area decoder 24, and processing of each processing block is presented with it. The area decoder 24 generates and distributes the parameter 25 of a filter, the multiplier of a multiplier 26, and the switch signal of the parameter of the TRC circuit 27 from an area command, a field recognition signal, and a hue signal.
[0033] A filter 25 performs moire removal of halftone, and edge enhancement of an alphabetic character according to spatial frequency to the image data reduced or expanded by **** circuit 23b. The TRC circuit 27 is for carrying out concentration adjustment according to the property of IOT using a translation table, and PAL29 is a decoder which switches the parameter of the translation table of the TRC circuit 27 with a development process or the signal of field discernment. A multiplier 26 calculates ax+b to image data x using multipliers a and b, and, in the case of halftone, a multiplier is switched like [in the case of through and an alphabetic character] High gamma. And data reset to a color alphabetic character, a black alphabetic character, and a pattern, color adjustment, and concentration adjustment are performed by combining with the TRC circuit 27, using and choosing suitably the multiplier and translation table to each color component. Moreover, the parameter of a filter 25 can be standardized and the edge enhancement of an alphabetic character can be adjusted by multipliers a and b. A memory system memorizes, or dot expansion is carried out in the screen generation section 28 of ROS300, and it is outputted by using as a halftone dot image the image data adjusted by these.
[0034] The edit processing section 400 performs color conversion, color edit, generation of a field control signal, etc., and is image data L* from a selector 17, a*, and b*. It is inputted. And the information on a chromaticity is changed into C of a spherical coordinate system, and H from a of a rectangular coordinate system, and b so that it may be easy to carry out color detection of a marker color and others, color edit, color conversion, etc. by LUT415a. The color conversion & pallet 413 has the color used by for example, color conversion or color edit in 32 kinds of pallets, and processes color detection of a marker, color edit, color conversion, etc. to image data L, C, and H according to the area command inputted through delay circuit 411a. And after only the image data of a field which processes color conversion etc. is processed by the color conversion & pallet 413 and inverse transformation is carried out to a and b from C and H by LUT415b, the image data of the other field is outputted from the direct selector 416, and is sent to the above-mentioned matrix conversion circuit 16b.
[0035] The 4-bit signal of a marker color (three colors) and a closed region detected from image data by the color conversion & pallet 413 is sent to consistency conversion and the field generation circuit 405. Using FIFO 410a, 410b, and 410c, with [a black pixel] a predetermined number [more than] in 16 pixels, binary-ized processing set to "1" is performed, and consistency conversion to 100spi(s) from 400spi(s) is performed in the window of 4x4 in consistency conversion and the field generation circuit 405. Thus, the generated marker signal (a closed loop and marker dot) is written in the plane memory 403 through the DRAM controller 402

from consistency conversion and the field generation circuit 405.

[0036] Moreover, about a marker dot signal, you make it delayed by three lines by FIFO408, it is made the window of 3x3, detection of a marker dot and generation of a coordinate value are performed in the coordinate value generation circuit 407, and it memorizes to RAM406 so that it may not be incorrect-detected, using small dust etc. as a marker. In addition, although the plane memory 403 also memorizes about this marker dot, this processing is performed in order to prevent incorrect detection.

[0037] The plane memory 403 is the memory for storing the area command for performing color conversion, color edit, and other field edits, for example, can specify a field also from an edit pad, and can write an area command in the field. That is, the area command of the field specified with the edit pad is transmitted to a graphic controller 401 through a CPU bus, and is written in the plane memory 403 through the DRAM controller 402 from a graphic controller 401. The plane memory 403 consists of the 4th page, and can set up 16 kinds of area commands to 0-15.

[0038] The 4-bit area command stored in the plane memory 403 is read synchronizing with the output of image data, and is used for the edit processing in a color conversion & pallet, the image-data-processing system shown in drawing (b), the ENL conversion circuit 15 and the matrix conversion circuit 16, a selector 17, the lower color removal circuit 21, and a pan by switch of the parameter of a filter 25, a multiplier 26, the TRC circuit 27, and screen generation section 28 grade etc. through the area decoder 24. In case this area command is read from the plane memory 403 and it is used for edit processing with the color conversion & pallet 413, a switch of the parameter in a image-data-processing system, etc., the consistency conversion to 400spi(s) from 100spi is required, and that processing is performed in the consistency conversion field generation circuit 405. In the consistency conversion field generation circuit 405, by blocking 3x3 using FIFO 409a and 409b, and performing a data interpolation from the pattern, consistency conversion to 400spi(s) from 100spi(s) is performed so that the boundary of a closed-loop curve, an edit field, etc. may not become notched. The delay circuits 411a and 411b and 1MFIFO412 grade are for performing timing adjustment with an area command and image data.

[0039] The color copying machine shown in drawing 5 the base machine 30 It consists of the platen glass 31 which lays a manuscript in a top face, the image input terminal (IIT) 32, the electric system control stowage 33, an image output terminal (IOT) 34, a form tray 35, and a user interface (U/I) 36. As an option, it has the film image reader which consists of the edit pad 61, the auto document feeder (ADF) 62, a sorter 63, and the film projector (F/P) 64 and the mirror unit (M/U) 65.

[0040] The image input terminal 32 changes into the digital image data BGR of many gradation the image information of the color copy which consisted of a wire 38 for driving the imaging unit 37 and it, and driving pulley 39 grade, separated the color of into the primary colors B (blue), G (green), and R (red) of light with the color filter in the imaging unit 37, and was read using the CCD line sensor, and outputs it to an image-processing system. An image-processing system is contained by the electric system control stowage 33, and inputs the image data of BGR. A color and gradation, It is what performs various kinds of conversion, amendment processing, and processing of versatility further, such as edit processing, in order to raise definition, other image quality, and repeatability. It changes into the primary colors Y (yellow), M (Magenta), C (cyanogen), and K (black) of a toner, the gradation toner signal of a process color is changed into ON / off binary-ized toner signal, and it outputs to the image output terminal 34. The image output terminal 34 has a scanner 40 and the sensitized material belt 41, changes image data into a lightwave signal in laser output section 40a, makes the latent image corresponding to a manuscript image form on the sensitized material belt 41 through polygon mirror 40b, F/theta lens 40c, and reflective mirror 40d, imprints an image in the form conveyed from the form tray 35, and discharges a color copy.

[0041] The sensitized material belt 41 drives the image output terminal 34 by driving pulley 41a, 41d of each development counter of cleaner 41b, electrification machine 41c, and YMCK and imprint machine 41e are arranged to that perimeter, this imprint machine 41e is countered, and imprint equipment 42 is formed. And the form sent through form conveyance way 35a from the form tray 35 is added, and after carrying out imprint equipment 42 four revolutions and making a form imprint each latent image of YMCK, from imprint equipment 42, in 4 color full color copy, a form is fixed by the fixing assembly 45 through the vacuum transport device 43, and is discharged to it. SSI(single seat inserter)35b can supply a form to form conveyance way 35a alternatively by manual bypass.

[0042] A user chooses a desired function, and directs the execution condition, and a user interface 36 is equipped with a color display 51 and the hard control panel 52, and can be made to carry out direct directions with the software carbon button of a screen combining the infrared touch board 53 further.

[0043] The electric system control stowage 33 contains two or more control boards constituted by dividing for every batch of the above-mentioned image input terminal 32, the image output terminal 34, a user interface 36, an image-processing system, and film projector 64 grade, the MCB substrate (machine-control board) for controlling actuation of the device of the image output terminal 34, the automatic manuscript feed gear 62, and sorter 63 grade further, and the SYS substrate which controls these whole.

[0044]

[Effect of the Invention] since it processes by ****(ing) in the **** circuit equipped with functions, such as expansion using memory, contraction, and migration, according to this invention as explained above — ******** — free — it can set up — moreover, cases, such as repeat processing, — ****(ing) — it can prevent a margin arising.

[0045] As shown in (b), even if drawing 6 is drawing for contrasting the conventional example of processing, and the example of processing of this invention, and explaining the effectiveness of this invention and corner migration stuffs an image at a corner conventionally in corner migration Although the margin of ******** was made at the corner and perfect corner migration was not completed, a setup of the read-out range of memory can stuff an image completely to a corner, and a margin can be prevented from being made at a corner according to this invention, as shown in (b). close and carry out, and, also in **, close and make it the same conventionally to be shown to (Ha) — since it ******(ed) and a part was added, it had resulted in closing only ******** too much, carrying out it and taking **, but according to this invention, as shown in (d), the user specified — it was specified — close and carry out — only the part of an amount can build a margin. Moreover, as expansion continuous shooting also shows to (e), the margin of ******** has been made conventionally, but according to this invention, as shown in (**), expansion continuous shooting without a margin becomes possible. furthermore, although the margin of ******** has been conventionally made between each image as shown in drawing 8 (b) also in a repeat, according to this invention, as shown in ** (b), the output of the image which the repeat without a margin was made to follow is attained, and it is shown in ** (d) — as — a rectangle — also ****(ing) — it becomes possible.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is drawing in which the image processing system of this invention ****(ing) and showing one example of a method.
[Drawing 2] It is drawing showing the example of migration processing, mirror image processing, and repeat processing.
[Drawing 3] It is the flow chart of the **** module control section.
[Drawing 4] It is drawing showing the example of a configuration of the signal-processing system of an image processing system.
[Drawing 5] It is drawing showing the example of a configuration of the device of an image processing system.
[Drawing 6] It is drawing for contrasting the conventional example of processing, and the example of processing of this invention, and explaining the effectiveness of this invention.
[Drawing 7] It is drawing showing the example of a configuration of digital color picture formation equipment.
[Drawing 8] It is drawing for the former ****(ing) and explaining the example of the evil of processing.
[Description of Notations]
1 [— **** is carried out and it is the processing section and 5. / — The scale-factor processing section, 6 / — The migration processing section, 7 / — The mirror image processing section, 8 / — The repeat processing section, 9 / — Expansion continuous-shooting processing section] — A system, 2 — The **** module control section, 3 — A manuscript detection module, 4

[Translation done.]

* NOTICES *

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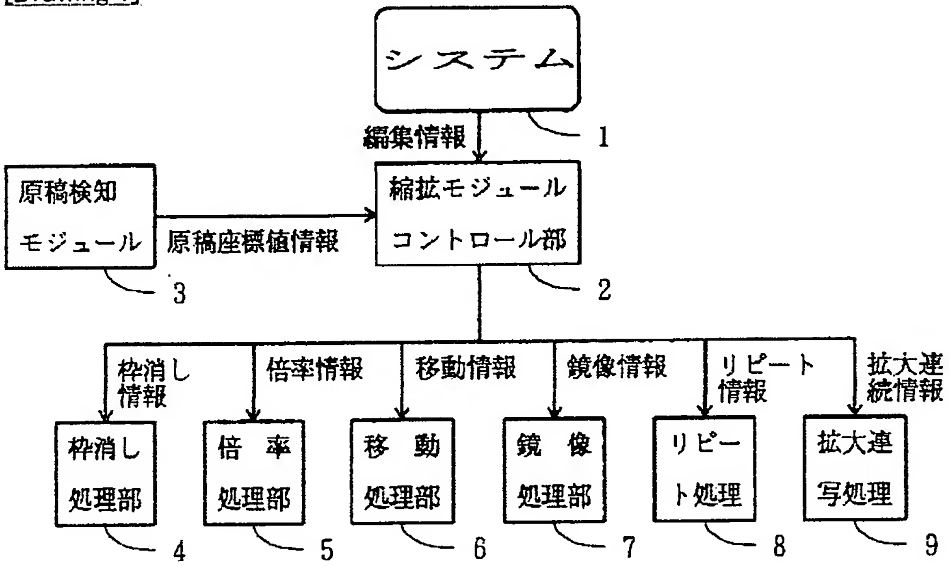
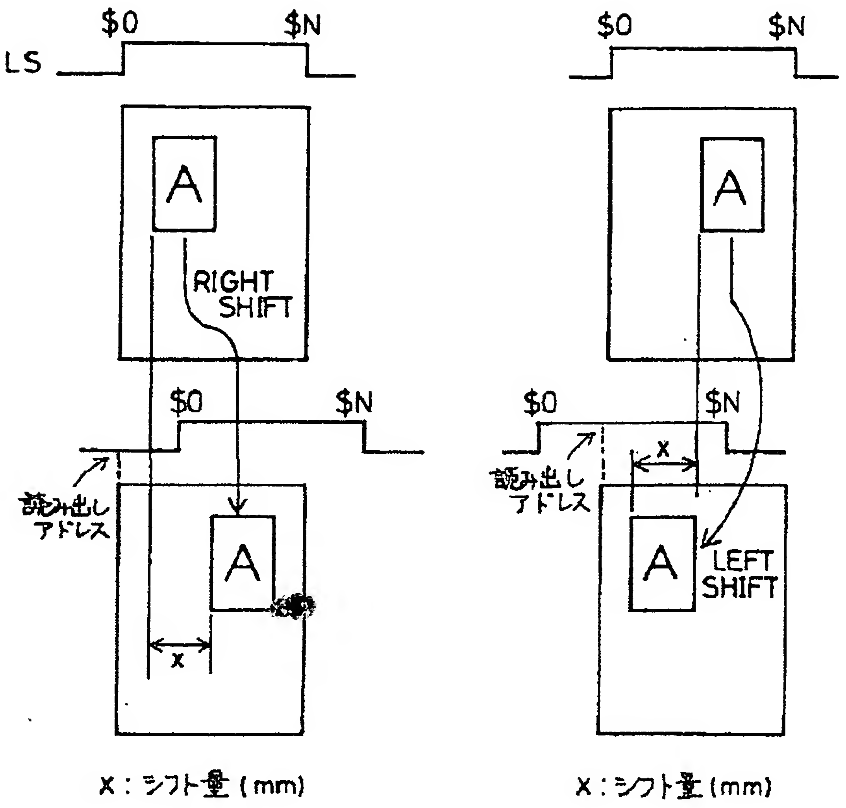
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DRAWINGS

[Drawing 1]

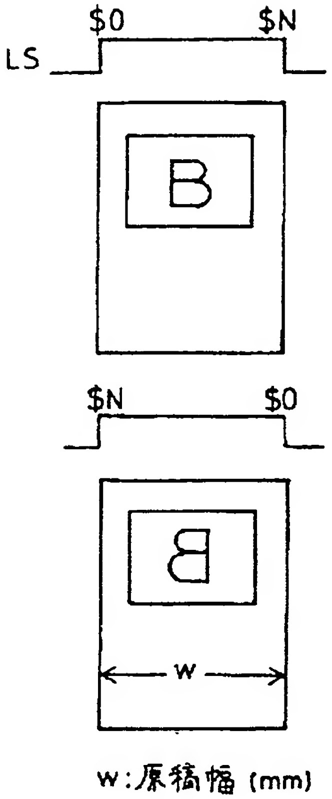

システム
編集情報
1
原稿検知モジュール
原稿座標値情報
縮拡モジュールコントロール部
3
2
枠消し情報
倍率情報
移動情報
鏡像情報
リピート情報
拡大連続情報
枠消し処理部
倍率処理部
移動処理部
鏡像処理部
リピート処理
拡大連写処理
4
5
6
7
8
9

[Drawing 2]

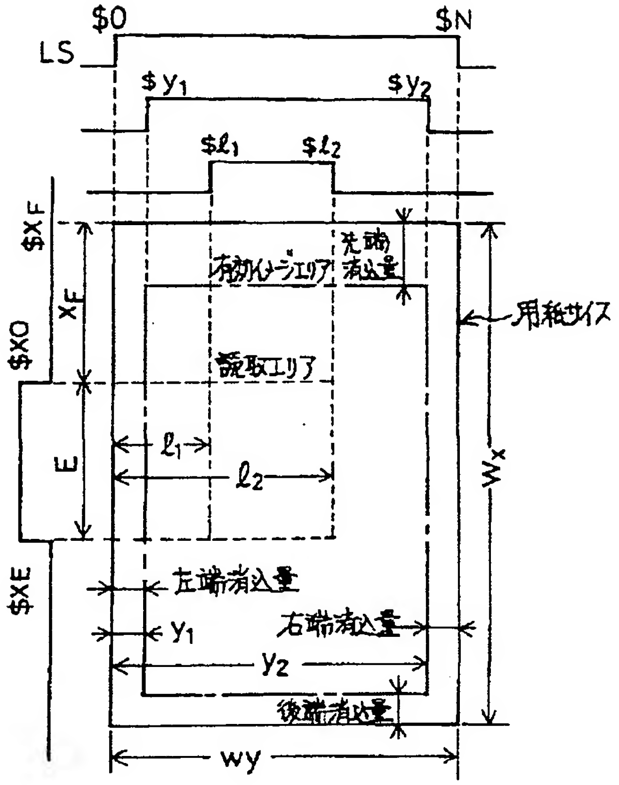

LS
$0
$N
A
RIGHT SHIFT
$0
$N
読み出しアドレス
A
x
X：シフト量（mm）
$0
$N
A
$0
$N
x
読み出しアドレス
A
LEFT SHIFT
X：シフト量（mm）

（イ）　　　（ロ）

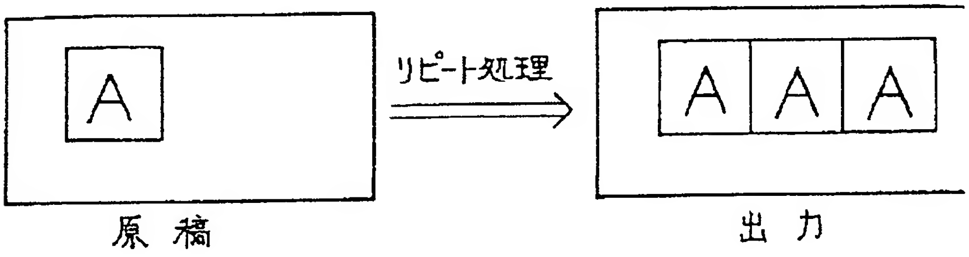
[Drawing 2]


$0
$N
LS
B
$N
$0
B
w
w:原稿幅 (mm)

(ハ)

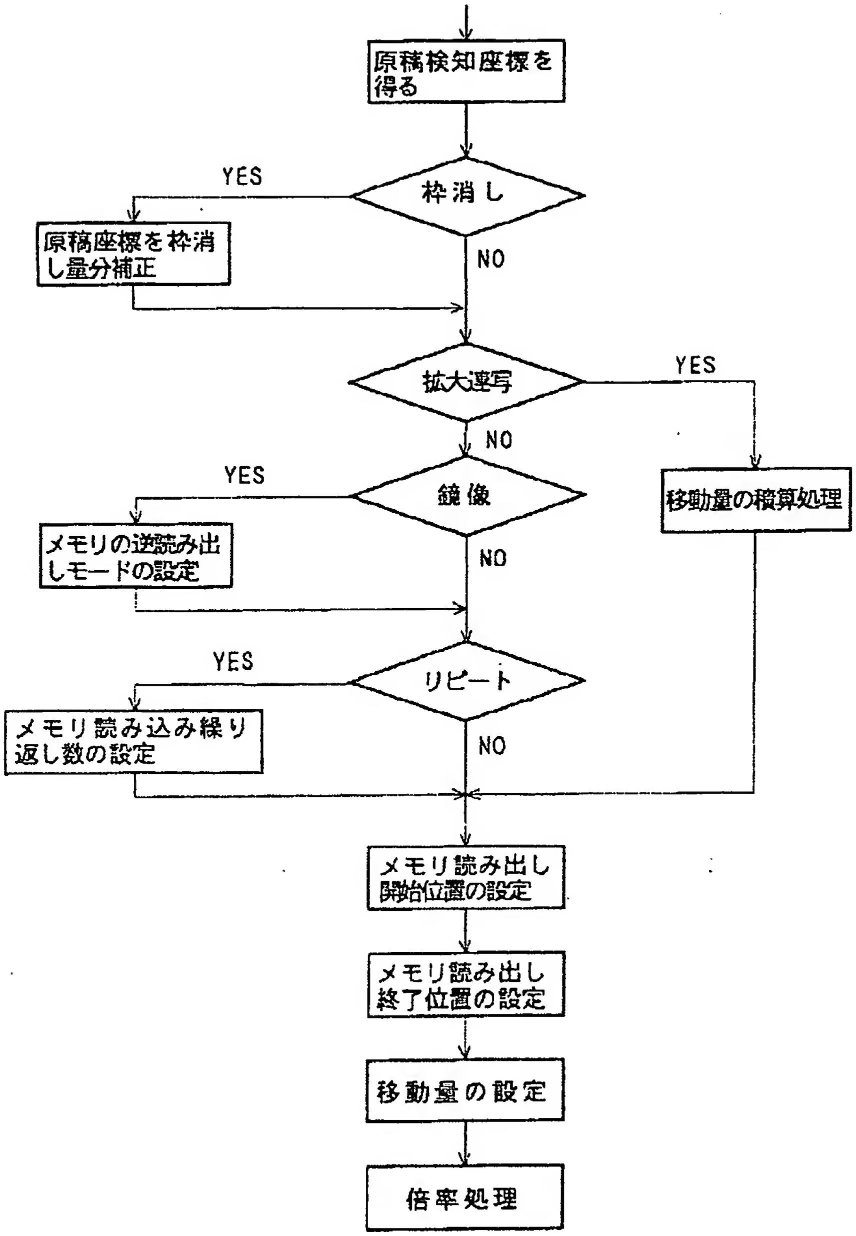

$0
$N
LS
$y1
$y2
$ℓ1
$ℓ2
$XF
XF
先端消込量
有効イメージエリア
用紙サイズ
$XO
読取エリア
E
ℓ1
ℓ2
Wx
左端消込量
$XE
y1
右端消込量
y2
後端消込量
wy

(ニ)

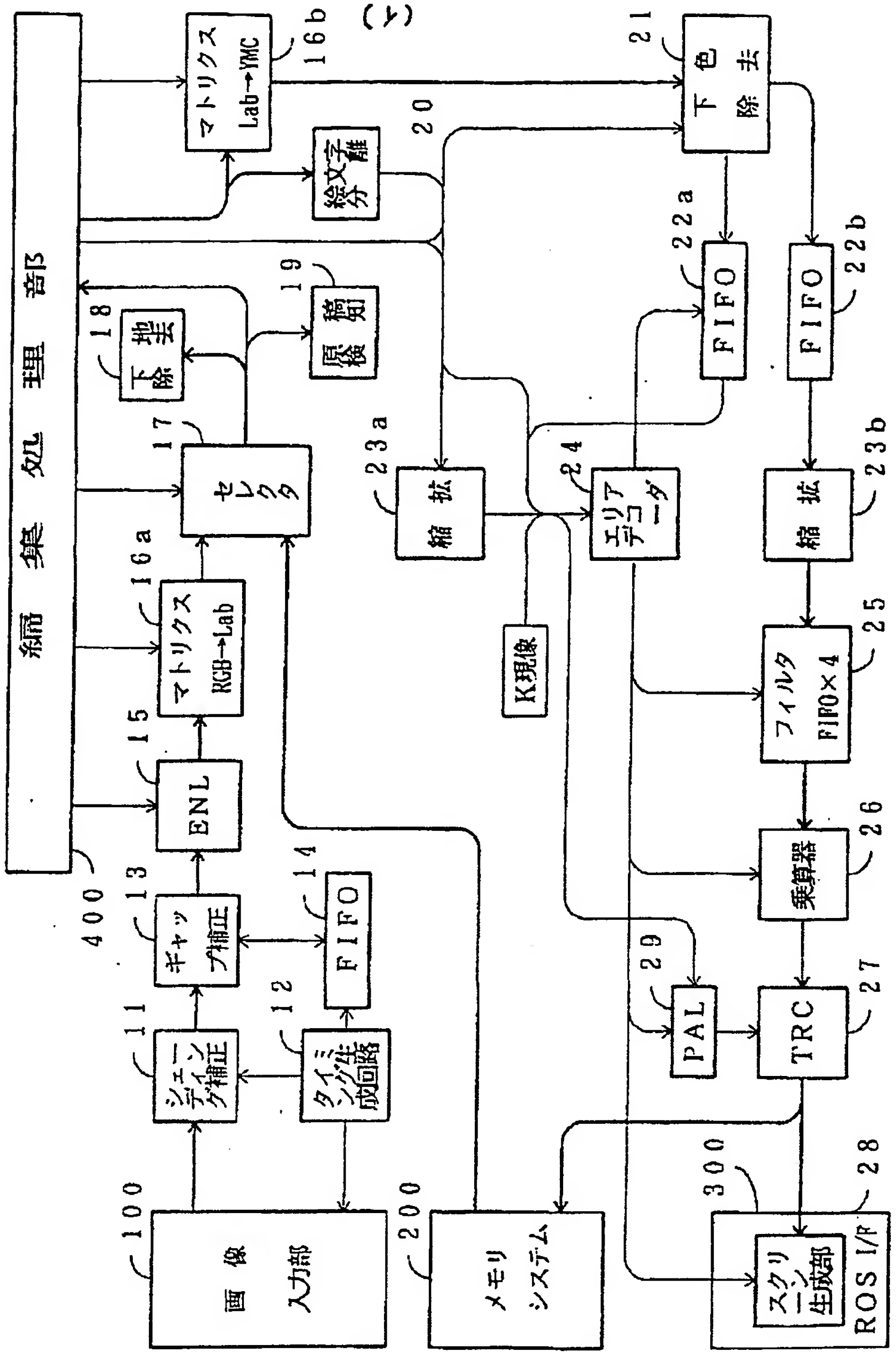

A
リピート処理
A
A
A
原稿
出力

(ホ)

[Drawing 3]

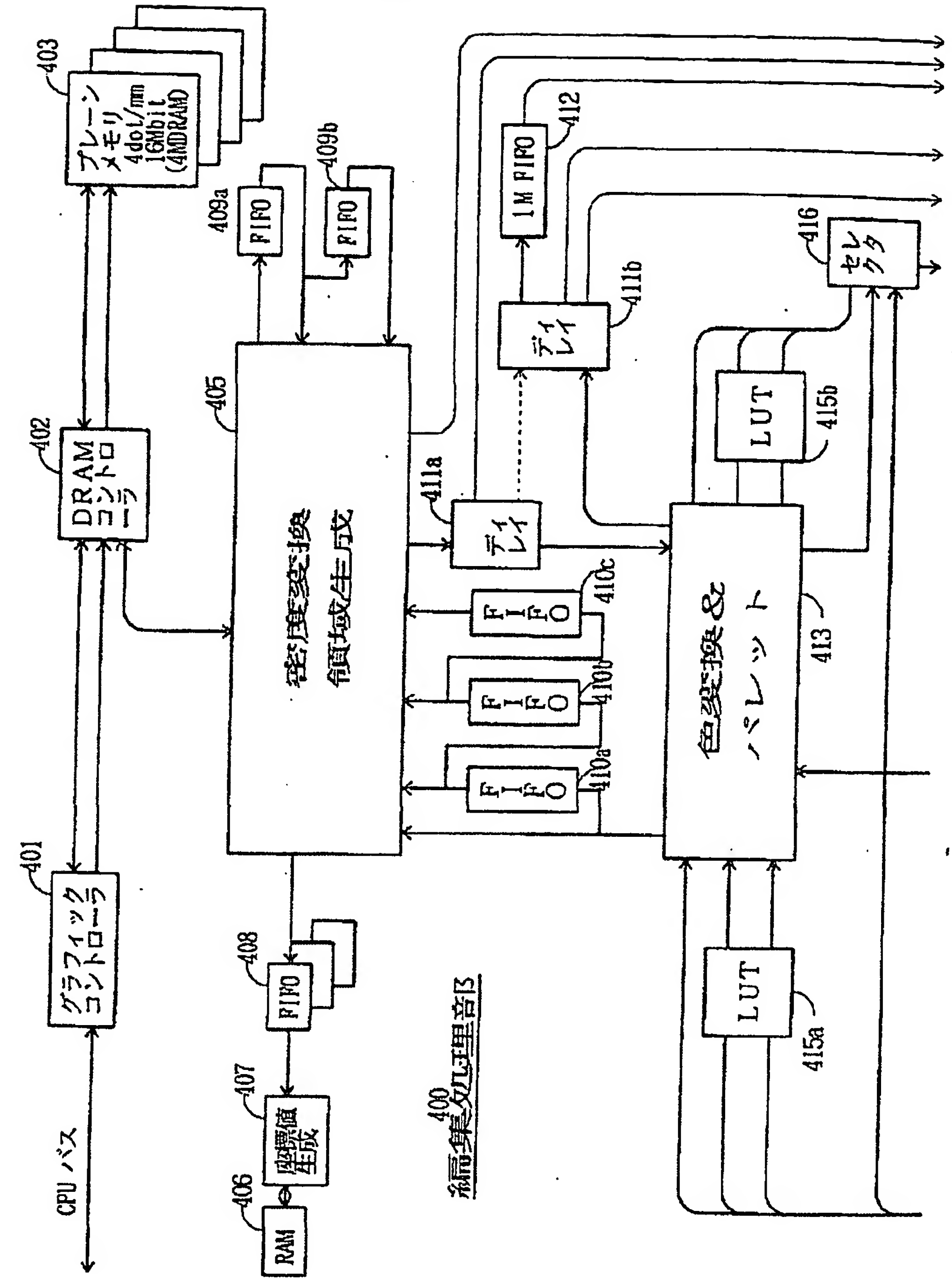

原稿検知座標を得る
枠消し
YES
原稿座標を枠消し量分補正
NO
拡大連写
YES
移動量の積算処理
NO
鏡像
YES
メモリの逆読み出しモードの設定
NO
リピート
YES
メモリ読み込み繰り返し数の設定
NO
メモリ読み出し開始位置の設定
メモリ読み出し終了位置の設定
移動量の設定
倍率処理

[Drawing 4]

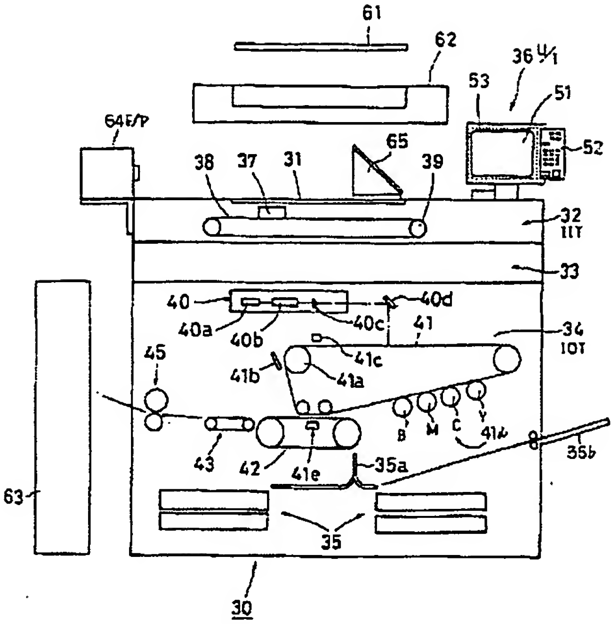

(イ)
編集処理部
400
マトリクス Lab→YMC
16b
下色除去
21
絵文字分離
20
下地除去
18
原稿検知
19
セレクタ
17
マトリクス RGB→Lab
16a
ENL
15
ギャップ補正
13
FIFO
14
シェーディング補正
11
タイミング生成回路
12
画像入力部
100
メモリシステム
200
FIFO
22a
FIFO
22b
縮拡
23a
エリアデコーダ
24
縮拡
23b
K現像
フィルタ FIFO×4
25
乗算器
26
PAL
29
TRC
27
スクリーン生成部
ROS I/F
300
28

[Drawing 4]

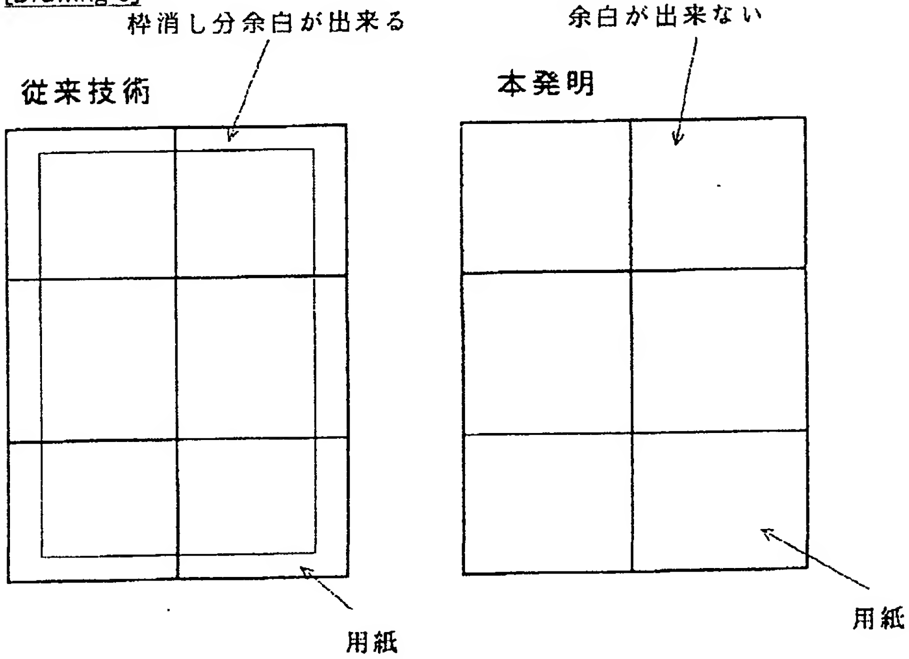
(ロ)


403
プレーン
メモリ
4dot/mm
16Mbit
(4MDRAM)
402
DRAM
コントローラ
401
グラフィック
コントローラ
CPU バス
409a
FIFO
409b
FIFO
405
密度変換
領域生成
408
FIFO
407
座標値
生成
406
RAM
400
編集処理部B
412
1M FIFO
411b
ディレイ
411a
ディレイ
410c
FIFO
410b
FIFO
410a
FIFO
413
色変換&
パレット
415b
LUT
415a
LUT
416
セレクタ

[Drawing 5]


61
62
36 U/I
53
51
52
64 F/P
65
38
37
31
39
32 IIT
33
40
40a
40b
40c
40d
41
34 IOT
45
41b
41a
41c
B
M
C
Y
41d
35b
43
42
41e
35a
35
63
30

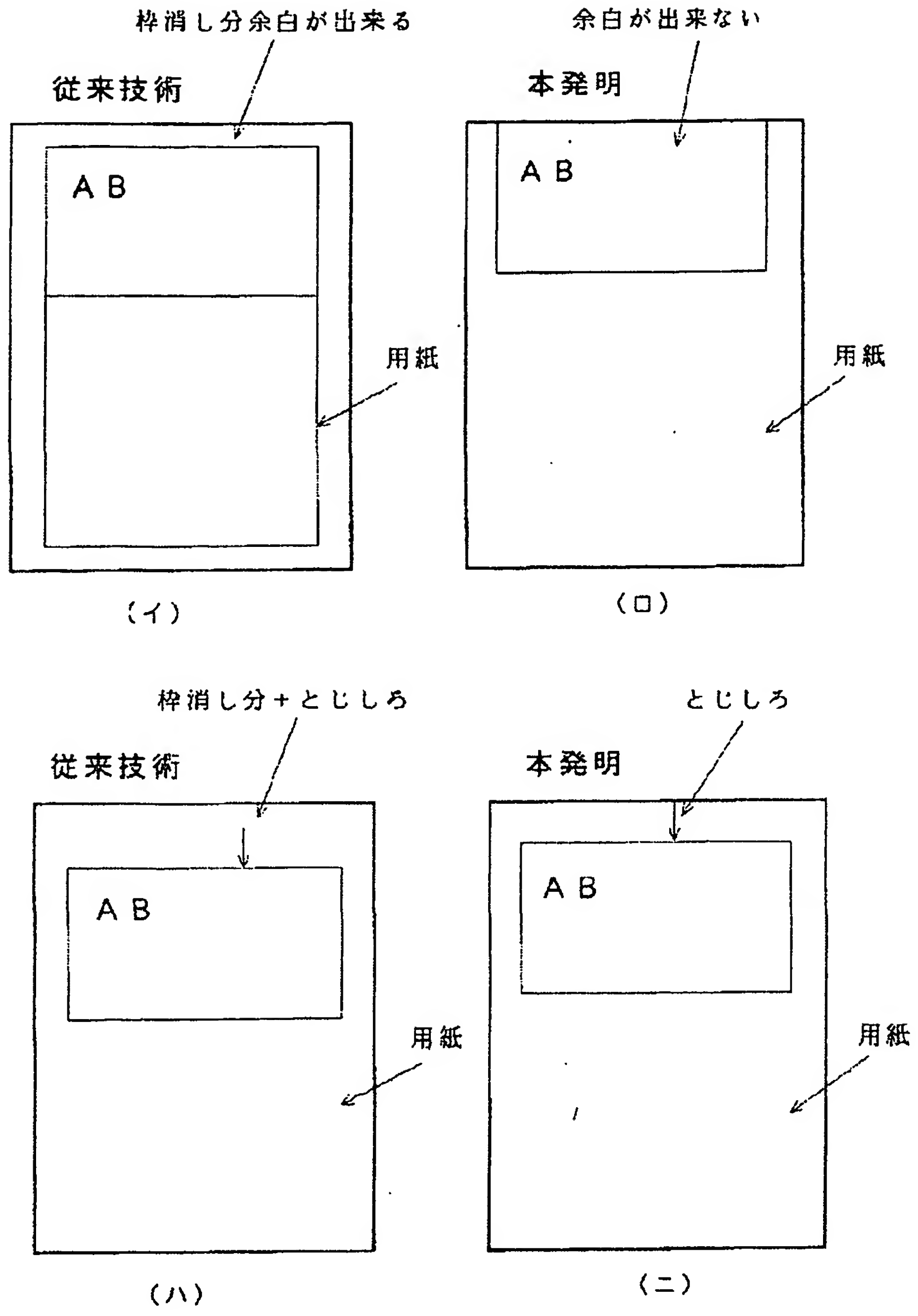
[Drawing 6]


枠消し分余白が出来る
従来技術
用紙
余白が出来ない
本発明
用紙

（ホ）

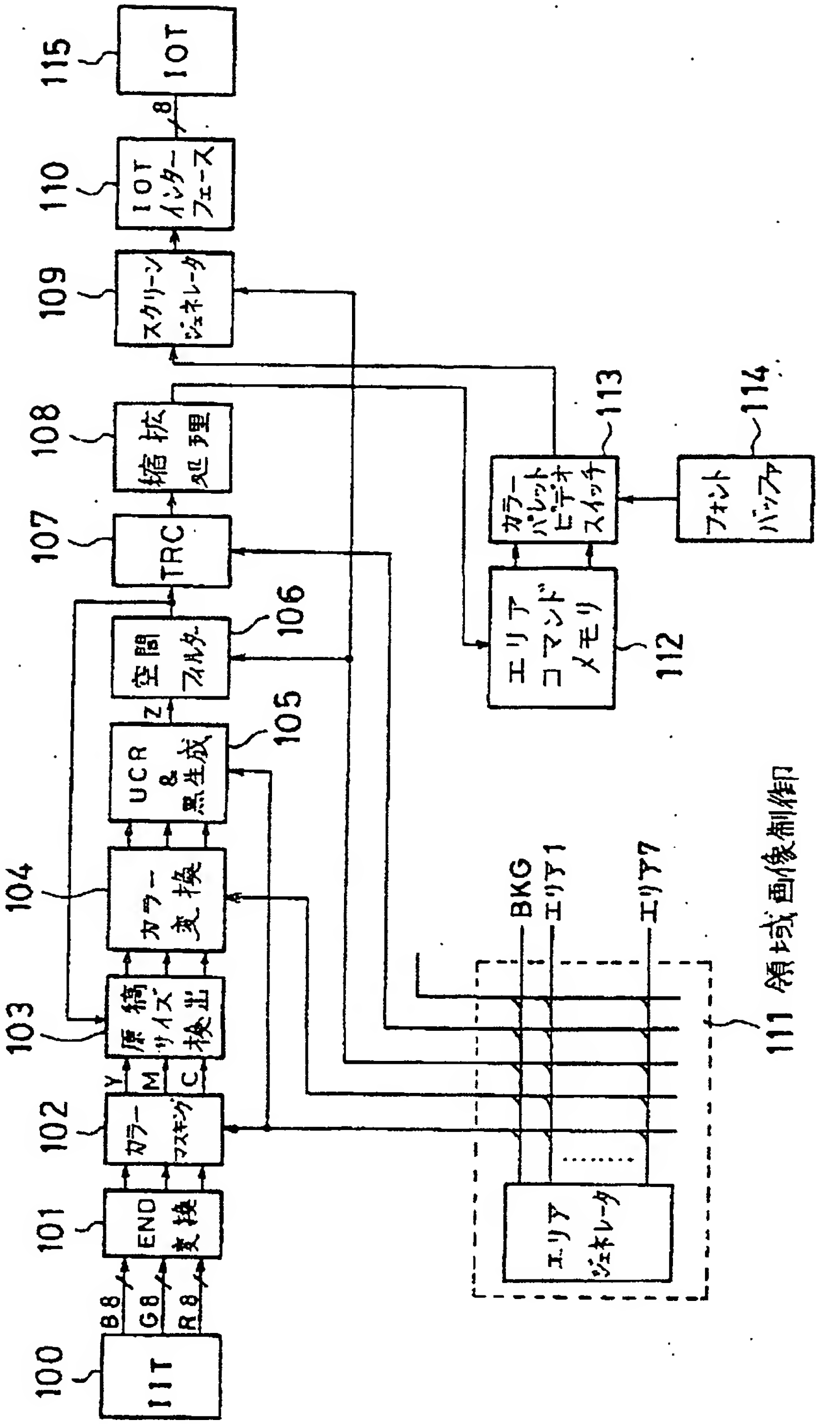
（ヘ）

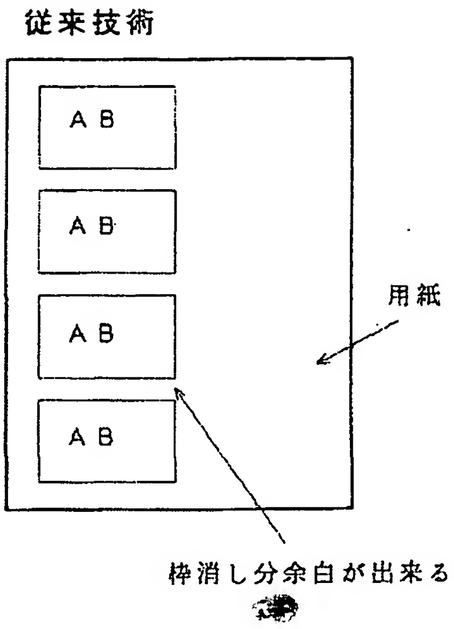
[Drawing 6]


枠消し分余白が出来る
従来技術
AB
用紙
(イ)
余白が出来ない
本発明
AB
用紙
(ロ)
枠消し分+とじしろ
従来技術
AB
用紙
(ハ)
とじしろ
本発明
AB
用紙
(ニ)

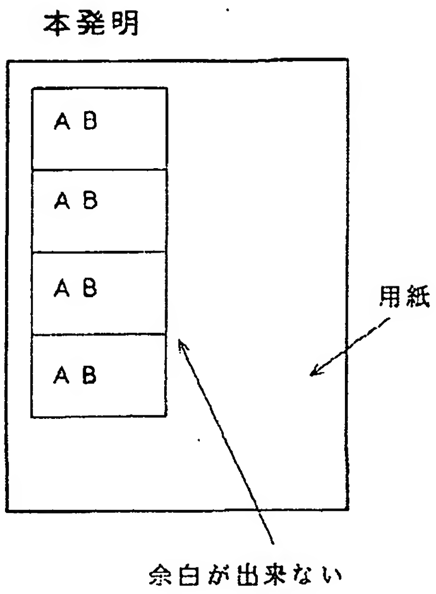
[Drawing 7]

[Drawing 8]

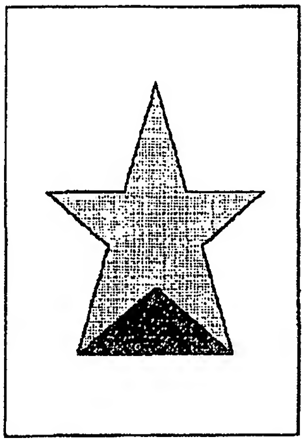

100
IIT
B8
G8
R8
101
END変換
102
カラーマスキング
Y
M
C
103
原稿サイズ検出
104
カラー変換
105
UCR
&
黒生成
Z
106
空間フィルター
107
TRC
108
縮拡処理
109
スクリーンジェネレータ
110
IOT インターフェース
8
115
IOT
BKG
エリア1
エリア7
エリアジェネレータ
111 領域画像制御
112
エリアコマンドメモリ
113
カラーパレットビデオスイッチ
114
フォントバッファ


従来技術
A B
A B
A B
A B
用紙
枠消し分余白が出来る

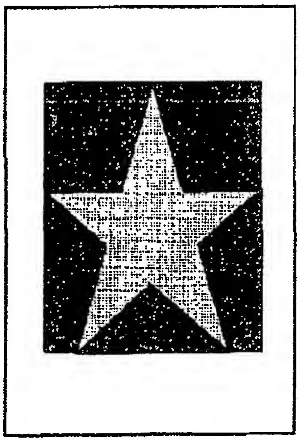
（イ）


本発明
A B
A B
A B
A B
用紙
余白が出来ない

（ロ）



（ハ）



（ニ）

[Translation done.]

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